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**PLEU** **OS**  
**PUMONIA**

STILL A THREAT  
TO U.S.  
CATTLE



# **CONTAGIOUS PLEUROPNEUMONIA**

## **STILL A THREAT TO U.S. CATTLE**

As he led his newly purchased cow down the gangplank of a British ship in Brooklyn harbor, dairyman Peter Dunn congratulated himself on his shrewd buy. She was a healthy-looking animal of good breeding—and the sea captain had bragged of her high milk production.

Unfortunately, it wasn't long until Peter Dunn and other American cattle owners learned the cow was no bargain. She was a carrier of the foreign cattle disease known as contagious pleuropneumonia. With each breath she took, she spread disease bacteria. But like other carriers, her appearance gave no clue to the infection in her lungs.

Contagious pleuropneumonia (also called contagious bovine pleuropneumonia) infected other dairy herds in New York State in that year of 1843. As it spread from Massachusetts to Maryland to Missouri, it caused great economic losses. Many American cattle sickened and died.

American cattlemen—alarmed at the spread and the cost of the disease—sought help from Congress in the 1880's. The U.S. Department of Agriculture was then given the job of getting rid of pleuropneumonia. In 1884 it set up the Nation's first cooperative State-Federal eradication program—similar in many ways to animal disease eradication programs in force today.

Eradication was completed in 1892, 49 years after Peter Dunn accidentally brought pleuropneumonia into the United States. The Nation spent \$1.5 million to get rid of the disease.

Even while it was fighting pleuropneumonia, the Department of Agriculture acted to protect the country from new invasions. It restricted imports of cattle from countries that had pleuropneumonia. By continuous enforcement of these regulations, the disease has been kept out of the United States since 1892.

However, the threat remains. There is always a small chance that pleuropneumonia bacteria might be accidentally introduced from countries where the disease occurs. If pleuropneumonia should get into the United States, it could again cause severe losses in our cattle herds.



**Contagious pleuropneumonia in the United States: 1843-1892.**

## WHERE IT OCCURS

Contagious pleuropneumonia is found in large areas of Africa, and it is spreading on that continent. In Asia, the disease is not considered a serious problem; it has been reported in China and India, however.

It occurs in northern and western Australia. The Commonwealth's active eradication program prevents the disease from becoming established in clean areas of southern Australia.

The disease has been eradicated from all of Europe—except Spain—and from the Republic of South Africa.

North America has been free of contagious pleuropneumonia since 1892. The disease has never been reported in South America.

## HOW IT SPREADS

Under natural conditions, pleuropneumonia spreads directly from infected to susceptible cattle on contact. Infected cattle breathe and cough out droplets of moisture containing *Mycoplasma mycoides*. The bacteria are then inhaled by nearby cattle. Exposed cattle—if susceptible—develop the lung infection.

Cattle vary greatly in their susceptibility to pleuropneumonia. Cattle in closely confined quarters have higher rates of infection than cattle on range. In typical outbreaks, about 40 percent of exposed cattle get the disease. About half the diseased cattle die.

In one African outbreak, 100,000 cattle died of pleuropneumonia within 2 years.

The disease spreads rather slowly. It is especially contagious in the early stages. Infected cattle begin to breathe out bacteria during the incubation period—even before signs develop. Cattle that recover from pleuropneumonia are a major source of infection; they continue to exhale bacteria for months although they show no signs of disease.

A few cattle are carriers—animals that never develop typical signs of pleuropneumonia. Carriers are dangerous because they frequently introduce the disease into previously uninfected areas. In fact, most new outbreaks can be traced to a carrier or to a healthy-looking animal in the incubation stage of pleuropneumonia.

## SIGNS

As the name implies, contagious pleuropneumonia is a lung disease. Cattle are the only animals naturally infected.

Susceptible cattle usually develop signs of pleuropneumonia 3 to 6 weeks after they are exposed.

There are three forms of the disease: acute, peracute, and mild.

### Acute form

The acute form is most common. It frequently is fatal. Surviving animals recover slowly.

An infected animal's temperature rises suddenly, accompanied by loss of appetite. There is a drop in milk production in cows.

Breathing becomes rapid and shallow. After exercise, the animal coughs frequently. At first coughing is dry, but later it becomes moist. As the disease progresses, the animal shows obvious pain in inhaling and exhaling. It assumes a characteristic stance, with head lowered, back arched, and mouth open to ease its breathing.

Usually, the bacteria invade only one lung. As pneumonia and pleurisy develop, the lung becomes inflamed and enlarged.

In fatal cases, air passages fill up and lung



**Animal stands with front legs spread apart and head down to ease chest pain. This stance is typical of pleuropneumonia.**

tissues die. The animal actually suffers from lack of air. Fibrous tissues connect the normally unattached lung to the chest wall. Great quantities of fluid may fill the chest cavity as lung tissues break down. Then cattle lose weight and stop chewing their cud. Swellings may develop in the throat and dewlap. Cattle may "go down" before they die. Death comes 2 to 5 weeks after first signs of disease.



**Opened chest cavity shows a dark pool of excess fluid between the rib cage (left) and lung. Gray fibrous adhesions (on rib cage and at lower center) connected the chest wall and lung before they were separated for examination.**

### **Peracute form**

The peracute—or severe—form of pleuropneumonia is uncommon. Cattle with this form develop many of the signs described for acute

infection. Or they may have a severe form of pneumonia. Death usually occurs 1 to 3 weeks after signs appear.

### Mild form

A mild—or subclinical—form also occurs. Although cattle do not show signs of disease, they become carriers and continue to spread pleuropneumonia. Normally, this form is not fatal for several years. Any time an animal with the mild form is under stress, it may develop signs of the acute form.

## DIAGNOSIS

Laboratory and field diagnostic tests have been perfected to detect contagious pleuropneumonia. In countries where the disease exists, diagnosis is based on an examination of suspect cattle by a veterinarian, history of the herd, laboratory tests, and a post mortem examination.

Post mortem examination often reveals a characteristic “marbling” of the lung. Large areas



Infected lung (top picture) has firm, liverlike appearance of pleuropneumonia. It has lost the spongy texture of normal lung tissue. Cross section of the same lung (below) shows typical marbling. Compare diseased tissue with small amount of normal pink tissue at top center of lung.

of damaged lung tissue may appear as dark as liver instead of the color of normal lung.

Pleuropneumonia—particularly in the early stages—may be confused with pneumonia and other respiratory diseases.

## HOW THE UNITED STATES GUARDS AGAINST THE DISEASE

The United States continues to prohibit imports of live cattle from countries that have pleuropneumonia. U.S. Department of Agriculture inspectors are stationed at ports of entry to make sure that import regulations are enforced. These measures are designed to prevent the accidental introduction of a carrier or infected animal.

### **If pleuropneumonia should reappear**

If pleuropneumonia should get into the United States in spite of our safeguards, it would again be a major threat to our cattle.

The United States Department of Agriculture has set up an emergency program to handle any outbreak of pleuropneumonia. Federal and State workers would begin eradication as soon as the disease has been confirmed by laboratory tests.

The cooperative eradication program would move quickly to wipe out every case of pleuropneumonia in this country. The following measures, which have proved to be the most economical, would be used:

Strict quarantines.

Slaughter of infected and contact animals.

Disinfection of premises.

Placement of test cattle.

Restocking of farms and ranches after the disease had been eradicated.



Cross section shows extensive breakdown of lung tissue.

## WHAT YOU CAN DO

Know the signs of contagious pleuropneumonia.

If you observe signs of the disease or unusual respiratory difficulties in your cattle, call your veterinarian or an animal-disease-control official.

Do not move cattle off your farm when an unfamiliar or undetermined respiratory disease occurs.

If pleuropneumonia is diagnosed in your herd or in your area, cooperate with State and Federal disease-control officials and with your neighbors in the eradication program.

This is one of a series of publications designed to acquaint American livestock men with foreign animal diseases and the steps to take if an outbreak is suspected.

If you want more information about foreign animal diseases, get in touch with your local veterinarian, your county agent, or State or Federal animal-disease-control officials.

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